

# NOTES ON THE BACTERIOLOGICAL EXAMINATION OF WATER FROM THE SYDNEY SUPPLY. No. II.

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Owing to some unavoidable circumstances, especially to the want of appropriate material for cultivating media, I was not able to continue, as I wished to do, the bacteriological examination of Sydney Water, until November 18th, that is for about two months (vide these Proceedings 1886, p. 912). From that date, however, up to December 21st, I was able to test nine samples of water from the Sydney Supply, derived from the tap in the laboratory of the Linnean Hall. On October 17th, I had the opportunity of subjecting a sample of water from the Prospect Reservoir to a bacteriological test.

The results of the examination of the first-named samples may be seen in the following table :—

Date.	Temper. of Water.	Number of Colonies in 1 ccm.	Liquefying Colonies in 1 ccm.
(1) Nov. 18	71°F. = 21 $\frac{2}{3}$ °C.	214	78 = 36 $\frac{3}{7}$ p.c.
(2) „ 22	70 F. = 21 $\frac{1}{9}$ C.	540	142 = 26 $\frac{1}{3}$ p.c.
(3) „ 30	73 F. = 22 $\frac{7}{9}$ C.	426	218 = 51 $\frac{1}{6}$ p.c.
(4) Dec. 3	74 F. = 23 $\frac{1}{3}$ C.	156	92 = 59 p.c.
(5) „ 6	72 F. = 22 $\frac{2}{9}$ C.	8	4 = 50 p.c.
(6) „ 8	74 F. = 23 $\frac{1}{3}$ C.	18	4 = 22 $\frac{2}{9}$ p.c.
(7) „ 13	70 F. = 21 $\frac{1}{9}$ C.	44	15 = 34 $\frac{1}{11}$ p.c.
(8) „ 16	74 F. = 23 $\frac{1}{3}$ C.	245	71 = 29 p.c.
(9) „ 21	72 F. = 22 $\frac{2}{9}$ C.	342	112 = 32 $\frac{8}{11}$ p.c.

The mean number of colonies out of these nine single tests amounts to 221 for one cubiccentim. of the water in question ; the mean of the liquefying colonies is 82, *i.e.* about 37 p.c.

The above figures indicate a relative purity of the water, if compared with those obtained on previous occasions. The greatest number of bacterial colonies which made their appearance on the plates of nutritive gelatine was, as is seen, 540, whereas in three cases with 8, 18, 44 colonies respectively, the water might be looked upon as nearly free from micro-organisms.

As far as the kinds of bacteria which came under observation are concerned, several new forms were isolated in addition to some of those described before. These bacteria, or at least the more interesting of them, will be dealt with at another time.

Here it may suffice to mention that, so far, pathogenic species have not been found to occur in the tap-water under consideration.

With regard to the sample of water derived from the Prospect Reservoir, alluded to above, I have to state that it was not handed over to me until some time had elapsed from the moment it had been taken. On examination it proved to be exceedingly rich in bacteria capable of propagation in nutrient gelatine; for about 4,000 colonies could be referred to 1 ccm. of the water under treatment. Liquefying colonies were comparatively very few.